

1

PROCEEDINGS
OF THE
SPECIAL COMMITTEE
OF THE
SELECT AND COMMON COUNCILS
OF THE CITY OF PHILADELPHIA,
APPOINTED TO REPORT UPON THE SUBJECT OF THE
WESTERN CANAL.

IN COMMON COUNCIL, }
December 18th, 1834. }

Resolved, That a petition presented and read this evening, praying the attention of Councils to certain applications for the incorporation of a company to construct a canal on the west side of the Schuylkill, now pending before the Legislature, be referred to a joint special committee, of three members of each Council.

Common Council appointed Messrs. CHANDLER,
BURK, and
CANBY.

Select Council concurred,
and appointed Messrs. KEATING,
PRICE, and
EYRE.

From the minutes.

R. HARE, Jun.
Clerk Common Council.

The committee met the 24th December, 1834, and continued their meetings until the 17th January, 1835.

At a meeting, held December 29th, 1834, they passed the following resolution:

Resolved, That the chairman be requested to invite any individual who may feel interested; and also to invite such persons as he may be requested to invite by the gentlemen present.

Testimony taken before the Committee.

JOHN WHITE.

I am engaged in the Coal trade. I think that the canal on the west side of the river would be a great accommodation to the trade, by giving more room. The advantage of the elevation of the canal would facilitate the loading of vessels—if vessels are ready to receive the coal it could be run aboard of them at once—if they were not ready, it could be landed on the flats—if vessels are ready to receive it, the coal could be immediately put on board; if not, it could be landed on the wharves. The expense of moving the coal back and piling it, would be fifteen cents per ton. To wheel it back and load it would be ten cents a ton—it would exceed that if you pile it high. On the west side you would run it out without piling. If you pile higher than eight feet, the expense is increased very much—I think many kinds of coal would lose ten cents a ton in every handling. There is a good deal of detention of the boats coming down and going back.—By using this canal, I think it would average a day's difference. A very few boats take up a return load. On the eastern side we never land our coal at low water, but are obliged to wait for the tide. I think there would be no detention on the canal—it would make a difference of more than a day, taking into consideration that they would unload at all times or hours of the day. I do not think that there will be room enough on the east side of the river in a few years, if this canal should not be constructed. I speak only of the city front which is about a mile. One mile long, fifty feet wide, and eight feet high, would contain only fifty-two thousand eight hundred tons of coal. I allow forty cubie feet to the ton. The consumption and exportation of coal has increased 33 1-3 per cent. upon the preceding years—225,000 tons were brought down this year, last year 250,000. I consider that the room on the west side will be necessary for the trade. If further accommodation be not afforded, I think that those concerned in the coal trade will seek some other point. The mouth of the Schuylkill has been talked of—Hog Island—League Island, and below the Navy Yard, have also been spoken of. Eldridge and Brick bought part of Mr. Girard's estate on the Schuylkill for this purpose.—Mr. Girard himself talked of making a large depot at the mouth of the Schuylkill for the coal trade. It would cost less to unload from the canal than at the wharves on the east side. The cost of unloading is from two and a quarter to three dollars a boat. There have not been a great many boats lost below the dam. I do not consider the risk much in taking a boat to the mouth of the Schuylkill. Coal boats may answer in tide water, but could not stand in stormy weather. It would not take more time to take boats by means of steamboats to the mouth of Schuylkill, than it now takes to carry them to our ordinary wharves. I think a good depot might be constructed at the mouth of the Schuylkill. The great increase of produce coming down will not leave room for the accommodation of coal—there must be some other place provided. The charge on the east side now is ten cents a ton per month for the first month, and five cents a month afterwards. This alone shows the necessity of another depot—for it is a great tax on the trade, and

indicates the propriety of seeking places of less intrinsic value, as coal depots, rents would not be so high on the other side. I do not think the city would suffer any disadvantage, if the coal depots were at the Navy Yard, but it would be more expensive to the coal trade—boats are now detained two or three days to cross the Schuylkill, when the wind is high.

JOHN STODDART.

I am concerned in the Coal trade. The canal would be a convenience in unloading—the elevation would be a very great advantage. There will have to be an increased quantity of wharves. All the wharves on the east side below the bridge, are occupied. I consider that some other improvement is necessary for the coal trade. In 1827, when the North American Company was, there was but one wharf occupied for coal—that was the second wharf below Walnut street—that year 16 or 18,000 tons of coal came down. Two boats were sunk last year below the dam.

WILLIAM WALLACE.

I am concerned in the coal trade; am of the firm of Blight, Wallace & Co. In reference to the trade, I am satisfied that the arrangement of the canal will afford facilities which we have not now. The first advantage is the facility afforded to boatmen coming down. The freight will be less by the canal. I have found that a boatman will very frequently come for a shilling a ton less, when he unloads at Mr. Ridgway's wharf, than when he comes to the lower front of the city—this makes a difference of six or seven dollars in the load. A boat carries about forty-five tons. I think that additional facilities are required. The whole front between the bridge and the Naval Asylum, is occupied. The city wharves near the bridge are not in demand for coal wharves, as there is not sufficient depth of water for coal vessels at low tide. The empty boats are delayed one or two days, the expense of which would be five dollars per day. There has been this season a number of boats sunk in the Schuylkill. I have never heard of any sunk within three or four miles above the dam. The average trip to Pottsville is ten days. The average freight this season has been a dollar. Another advantage of the canal is the unloading of boats at all times. Frequently it occurs that the tides suit only in the night season, which is attended with considerable waste of coal. It takes five or six hours to unload a boat, and the tide suits for this purpose but about three hours. I have known instances of boats requiring two tides;—many instances occur of boats being left over the next tide. The wharf rents are extravagantly high. The largest wharf in the city could not unload more than four boats. The great increase of produce coming down the river, will not

leave room for the accommodation of coal—there must be some other place provided. The charge now on the east side is ten cents a ton per month; that alone shows the necessity of another depot. The expense of landing, &c. amounts to ten per cent.; this charge would not take place on the west side.

EDWARD H. GILL.

I am an engineer, and acquainted with the contemplated route of the canal. The canal will be useful to the shippers in the coal trade. Boats can be unloaded with great advantage, owing to their being on a level with, or above, tide water. The proposed canal is to be forty-five feet surface, five feet deep, thirty feet at the bottom, and two and a half miles long. The water which the canal would contain, would be 91.666 cubic yards—equal to 223 locks full, of ten feet lift—which is the average of the locks at Fairmount. They are fourteen feet at low tide, but this is the average.

I cannot answer exactly what would be the evaporation of this canal. In Europe it has been found to be two cubic feet per mile per minute, or one-tenth of an inch per day in depth. Our climate is different, and I should think evaporation would be greater here than in England. I know the soil through which this canal is to pass; it is not calculated to produce absorption more than ordinary canals. I should estimate evaporation and filtration at seventy cubic feet per mile per minute, for the first and second years, and after that it might be reduced to one-half. This estimation is made upon ordinary canalling. Absorption depends upon the nature of the soil, and the manner in which the canal is made. Upon the New York Canal, it was found that forty-five cubic feet per mile per minute was lost upon 123 miles. This 123 miles of canal passes through all kinds of soil, with heavy embankments. The soil here is very good, and I should not think as much water would be lost as in an ordinary canal. It would not be exposed to breaches. In relation to evaporation and leaking, from an experiment which I made, I found that thirteen cubic feet was lost per mile per minute, in nine miles of canal. I made another on forty miles; there I found it twenty-five cubic feet. On the nine miles the soil was very favourable; there was no embankment, and the cutting deep. There is nothing better than blue mud. The great absorption arises from the embankment. With proper waste wiers, the water in this canal would not be more impure than the water in the dam. There is no more danger of the water becoming impure in the canal, than in the dam. The agitation produced by the boats passing, would of itself prevent stagnation. There would be no difficulty in having docks from the river constructed so as to load from the canal at all times.

NATHAN NATHANS, Esq.

I am engaged in the coal trade. I have turned my attention to the

contemplated canal, and think it very essential that some improvement should be made to afford more facilities to the shippers of coal. I do not think that there is room enough on the east side of the river, even for the present trade of the Schuylkill. My present impression is, that unless further facilities are afforded, the coal trade will pass to some point where more facilities will attend it, than do on the east side of the river. I think it highly probable that it will pass to the mouth of the Schuylkill or to League Island. The canal, from the advantages of its elevation, together with the room on the west side, would keep the trade here. I think that this canal would decrease the expense from thirty-five to forty cents per ton—in this I do not include the charge on the canal; breakage of coal would be avoided by schutes and screens with scales attached; all coal intended for shipping would be on the west side; it would only be beneficial to the shipping trade. When the coal is passed over the screen it could be passed immediately into the vessel—it could be screened as it passed into the vessel, and all the breakage and loss from shovelling avoided. On the east side there is no possibility of screening the coal except by hand. It is the general usage of the trade that coal shall be screened before it is shipped. Of the coal shipped, not one twentieth is put from the boats into the vessel—perhaps not one twenty-fifth part. The trade is becoming more particular than formerly. If I had an order to ship, I should not consider it fair to pass it from the boat into the vessel.

The whole toll on the Schuylkill Canal is about ninety-three cents, from Pottsville to Fairmount—being about one cent per ton per mile. I should think this canal would pay an interest by taking the same proportion as on the Schuylkill Canal. In my estimate of saving by this canal, I have considered one day saved in going back,—I think it would average more. Opening of new streets on the east side injure the wharves. Since I have been in business, three years, I have lost two boats below the dam. On one occasion there was a storm, and the boat was sunk at the wharf—the other was lost in the same way. There is some danger in high winds to boats going down the river; but I think there is more danger at the wharf. Boats are detained in consequence of their waiting for their turns at the wharf. On the canal there would be more room and greater facilities. I have known empty boats to be detained three days from getting up to the locks. It requires high water to unload on the east side, and although tide locks might be made, yet I do not think you could get the owners of wharves to make them. They would cost, perhaps, ten thousand dollars. Boats might be made to be safe on tide water, but they will carry less coal, and this would raise the price of freights. I do not think that if the foreign coal trade were carried on from the west side of the river, any of those who are concerned in it would remove to the west side of the river, except labourers and boatmen. The captains and agents would continue to live on this side of the river. At first, the canal would decrease the price of wharves on the east side—at present they call for very high rents. The increased consumption of coal in the city and other trade, will require all the eastern side of the city. A very small proportion of coal boats take freight back—all they take is plaster,

salt, &c. along the line of the canal. Often, for want of room, vessels cannot be got for shipping—this affects the trade, for it makes freight higher. I have known freights to Boston to rise fifty cents in a week. Shippers are much prejudiced by not being able to load vessels promptly. If the canal were extended all the way to the mouth of Schuylkill, I would prefer doing business opposite to the city—it could not be carried on below with more advantages than on the west side of the Schuylkill. I could not carry on this trade to advantage if I resided at the mouth of the Schuylkill. If it were on the west side, opposite the city, the expense of going there would be a trifle—need not keep a gig—there are omnibuses at every hour. The subscription to the omnibus is five dollars per quarter. At present there is a business of bituminous coal and iron. The Lycoming company is located on the west branch of the Susquehanna. There will be an extensive business carried on, which will require in the city additional facilities. Large quantities of limestone are burnt in the city, and sent abroad. I am under the impression that the Boudinot lands are in the coal region. In this canal the city of Philadelphia is interested, because they are the owners of the Girard coal lands. We consider the coal when landed, to cost about four dollars per ton—consequently the saving by this canal, would be about forty cents, or ten per cent., and be of itself a handsome profit—one with which the coal dealers would be satisfied. I would be contented to do business with the advantage which this canal would afford without any other profit.

WILLIAM T. SMITH, Esq.

I am well acquainted with the blue mud of the meadows—it is about as impervious to water as any kind of soil—I think that there is very little if any leakage at all. I have considered the subject of this canal. There has never occurred to me any disadvantage from it to the city of Philadelphia, nor have I heard any suggested by any body that had the least weight. I should think that whatever tended to increase the trade of the Schuylkill was beneficial to the city. By the ship building at Kensington the city is benefitted. I do not think a canal could be advantageously made from Gray's Ferry to the mouth of the Schuylkill. I have known them go down the blue mud as deep as fifty feet. It would be very difficult to construct a canal below Gray's Ferry. I would not consider the continuance of the canal on the west side to the mouth of the Schuylkill, a reasonable project. I will not say that it would not be suggested by a sane mind—but it certainly would not be suggested by a prudent mind. The surface of the meadow ground below, levels four feet below high water mark.

DAVID M'CLURE.

A number of experiments have been made on the evaporation of

water, by Deluc & Dalton. The latter published a table of evaporation (in the fifth volume of the Manchester Society's Transactions,) in different temperatures. The lower medium is $\frac{44}{100}$ ths of a grain to every $28\frac{1}{4}$ superficial inches, and the higher about $\frac{78}{100}$ ths. My calculation is founded on $\frac{50}{100}$. The evaporation per foot would be 5,346,000 ounces—445,500 pounds in twenty-four hours, or 5,346 cubic feet, making 40,095 gallons evaporation in the whole canal in twenty-four hours. Our brick kilns will retain water a long time. The soil is of an ungueous material. This soil strikes me as a clayey soil. At the Permanent Bridge there is a high bluff and some gravel. I made a report to Councils about three years ago, containing an account of the soil. I was once consulted by somebody as to League Island for a depot for coal. They were anxious to ascertain how Broad street continued would strike it. I found that it did come out there. I would suggest to the committee that they should select men of science, and submit to them all the inquiries necessary. I do not think it enough that the water should be agitated by the boats to keep it pure—but if it ran over at the end of the canal, and also at a waste wier, it would be pure.

EBENEZER MITCHELL.

I have been engaged in running boats from Pottsville, for the Delaware Coal Company. When the wind blows high from the west, you cannot get down from the locks at all in one trip. I was kept two days—one at Fairmount, and one coming down below Market street Bridge and Mulberry street. I never lost a boat, but was very near it. I have known a good many boats sunk this side of the dam—as many as six or eight during the two years I have been engaged. They could not have been navigated to the mouth of Schuylkill. It is difficult to cross the river; you cannot pole it, it is so deep. I have known boats to be detained three or four days at a time—there was no possibility of getting out. I have known of boats lost when fastened to the wharf. Going through this canal would make two days difference in a trip. There are three hands to a boat. They cost from three to five hundred dollars.

The price of a horse from Pottsville to Philadelphia and back is nine dollars—I had two boats last season, and made 21 trips with one boat, and 19 with the other.

WILLIAM WRIGHT.

I have followed boating on the Schuylkill four seasons. There is a great deal of inconvenience in coming down this side, from winds and tides, and frequently the boats catch on the wharves, and from the motion of the tides sink. In the four seasons that I have been engaged, I have heard of half a score of boats being lost, and I have myself known of

three. In coming down to the wharves and going up to the locks, the average time would be two and a half days—I have gone in six hours, and have been detained four days—it depends altogether upon the winds and tides. I have lain three days after unloading, owing to the wind—this has occurred several times. I have been driven down from Walnut street as far as South street many a time, trying to cross. I was several times delayed three days after I had unloaded—I have been delayed five days even when the wind is still—it is too high to go over the river. It takes from four to four and a half hours to unload a boat with four men. It would take us about an hour to go down the canal. We used to pay two dollars for unloading. We now pay from three dollars to three and a half to unload a boat—this season I have paid three and a half—the fair price is three dollars. Before we unload, the tide must run up about two hours. A great deal of the coal falls into the docks, which is lost to the coal dealer. High floods and accidents produce fluctuations in the number of boats, sometimes great accumulations—at other times few arrive. I have seen more than one hundred boats lying at the wharves at one time. What we don't eat on board is thrown overboard.—There is a penalty for throwing into the canal.—On the canal we would throw these things on the ground. Last season I picked up out of the dock, for the North American Company, about seventy tons of coal. I was paid for it \$1 50 per ton—the Company found the dredge and line. I have made sixteen trips this season—I began the middle of June, and continued till three weeks since. I take back very little merchandise. This season freights were on an average, one dollar—they were not higher than one and a quarter. Two years ago, in 1832, they were \$2 75. As much as \$3 75 was paid that year—they seemed to say that the Cholera had an effect on it.

JOHN C. MARLL.

I am engaged in the shipping of coal. The most material advantage of the canal, is having high water all the time for the loading of boats. Such facilities are wanted for the trade. We found great difficulty when vessels are scarce for want of room to deposit the coal; when they are plenty, we find no difficulty—the advantage is very great to have coal on hand. Want of room raises freight. I have not made a calculation of the saving by the canal—the mere stacking would be $12\frac{1}{2}$ cents.

GEORGE PATTERSON.

I reside at Pottsville, and am concerned in the coal business. The first advantage of the canal will be to enable boatmen to come down without having to wait for the tide, I have shipped a good deal of coal, and boatmen mostly make a condition as to the time they are to remain.

They frequently object to going to certain wharves, where they cannot discharge quickly—all these things enter into the charge for freight. Another advantage would be, that the boats would be high, and the coal would descend; coal is a very heavy article—there is a considerable waste when it is necessary to raise coal. Boatmen allow two or three days waiting for tides—they seldom can unload with one tide—they now hire hands to unload—on the canal I think they would unload themselves. With this canal from forty to fifty cents a ton would be saved, besides the waste of coal from numerous handlings. Boats are often injured by settling at one end—by tides falling before the unloading is completed. I saw a boat nearly ruined by being caught in a wharf during tide. A boat of mine went as far as Mount Holly, with fifty tons; but I consider that it was unsafe, and I would not have allowed her to go, had I known it. I think that this canal is necessary. Next year we shall send down 300,000 tons—in the course of five years I believe there will come to Philadelphia a million tons. It takes three men from sunrise to sunset to unload a boat of fifty tons. I have paid 62 1-2 cents a ton for wharfage for six months. I have never heard the canal at Pottsville complained of, on account of improper substances thrown into it. It has never been a nuisance.

JOHN HEMPHILL.

I am not in the coal trade. I have frequently thought of this canal, and thought very favourably of it. I think it will be a general benefit. Perhaps the wharf owners on this side might think it a disadvantage to them, but it will be a general benefit. If the marshes on the west side were filled up and made solid ground, it would improve the health of the neighbourhood. There is a great quantity of earth back of the alms house, which will have to be removed—the meadows would be a very proper place of deposit for it—it would be used to fill up, it is gravel and clay.

I am one of the managers of the alms house. I think the canal would benefit that property, and add very much to its value. I do not know how it would affect property above the bridge—have not turned my attention to it. I speak as an individual not as a member. The sense of the Board of Managers has not been taken upon the subject. The canal would pass over the culverts—it is sufficiently high for that purpose. The culvert of the alms house now enters into the ditches. A sheet of three or four inches of water passing over the canal would keep it pure; perhaps the movement of the boats alone would do it. I do not say that it would depreciate the wharves on the east side. I think the time is not far distant, when the wharves on this side will all be wanted for other more valuable purposes than coal. I think every facility should be given to the trade. I do not think that the canal would draw away the population from this side.—It will cause a population and business on the other, but it by no means follows that the population must be taken from the city. I do not see any injurious consequen-

ces of any kind from this canal to the alms house, either to its pecuniary value, or health, or discipline.—Its being cut off by the canal would be an advantage, in separating the population. Making League Island a depot, would be of no advantage to Philadelphia.

GEORGE W. BLIGHT.

I am concerned in the coal trade. I have viewed this canal as a desirable thing, furnishing many advantages to the trade—more room and more accessible at all times. My impression is that next year will show that the city front will not afford sufficient accommodation. I have not thought that the horse-shoe canal will be of any practical use for the purposes of shipping. Our wharf is 80 feet front, with docks on both sides, which gives 115 feet altogether. It is 80 feet in the river, and near 300 feet deep back—it is 150 feet wide. This year we commenced in June, and got down between five and six thousand tons, and last year, upwards of eight thousand tons. I suppose that ten thousand tons might be shipped from our wharf. All concerned exclusively in the foreign trade, would go over to the canal—one third of ours, (that is Blight, Wallace & Co's.) is city business. There would be enough of other business to occupy the coal wharves that would be vacated on this side. The small vessels that could pass through the horse-shoe canal, will go out of use—large vessels only will be used—we now use vessels of 200 tons, and those of 250 tons have come up the Schuylkill. Without making any calculation, I think in the handling alone of the coal, from twenty to thirty cents a ton would be saved by the canal, merely on one or two handlings and waste. I do not speak of the loss of time, and the expense of men and boats, as the trade is now carried on. The consumption of coal between the mines and this place, was about 70,000. The whole consumption of the city would be about 1-3—about 30 per cent. of the whole quantity is the city proportion. I should think it would cost more to take it to League Island.

LETTER FROM ENOCH LEWIS, ESQ. ENGINEER, *To the Chairman of the Committee.*

Philadelphia, 1mo. 17, 1835.

Jos. R. CHANDLER, Esq.

As I was requested to attend the committee of the Councils appointed to inquire into the consequences which may be expected to result from the proposed canal on the west side of Schuylkill, but did not receive the notice in time, I offer to the committee a few hasty observations in writing.

1. I conceive that if the canal is ever to be made, it ought unquestionably to be done as soon as practicable.—The improvements which are to be expected on the western side of the river must interfere with,

or be interfered with, by the canal, and the longer it is delayed, the greater must be the difficulty and damage encountered and sustained.

2. My opinion is, that the improvements which have been made, and those in progress, must in a few years cause a great increase in the trade of the Schuylkill, and probably amount to as much as the water in the upper parts of the river can convey. This trade will demand facilities which the present improvements do not furnish--the demand for coal must increase, and as the supply is immense in those districts which are connected or connecting with the Schuylkill, there can be no reason to doubt that the quantity shipped from this city will become incalculably great. This trade and the wealth flowing from it must increase with the facilities afforded to it. Now I conceive this canal offers advantages peculiar to itself, as it must run at no great distance from the river, and yet far enough to admit of docks opening into the river being made so near the canal that boats lying in the latter may be unloaded at once into vessels lying in the dock. The water in the canal being preserved at a uniform level, and docks being furnished as they might easily be, with gates, by which the water could be shut in or shut out at any stage of the tide, the vessel could be always kept at a constant level, any where between high and low water elevation--thence machinery could be brought to supply the place of manual force, in transferring the load from the canal to the river, or if manual strength should be resorted to, the advantage of constant elevation in one or both the vessels is too obvious to require illustration.

3. The water saved in case the demands of the city and those of the Navigation Company should interfere must be very great. It is true the surface of water exposed to evaporation would be increased, but as the small streams flowing through the alms house property, and even Mill creek could, if required, be thrown into the canal, we have the means of increasing the supply in the case of the very improbable event of a scarcity. It is therefore useless to enter into calculations respecting the quantity lost by evaporation. The canal would contain about twenty millions of gallons; 100 boats ascending, and as many separately descending through the locks, would require about sixteen millions. This number when the trade is active, may probably pass in 24 hours. The locks would therefore, in 30 hours, when the trade is active, carry off the canal full of water--that is to say, more than would be lost by evaporation and filtration in a year. I surveyed the alms house property, and though the project of a canal did not occur to me, I think I know something of the ground, and apprehend the water lost by filtration must be inconsiderable. Indeed the interests of those who should erect warehouses on the river edge of the canal would require that the canal should be rendered nearly if not totally water tight. Hence little water could be lost in that way.

But a very important consideration to the citizens of Philadelphia is, that if the canal should not be made, a depot for coal, and the necessary appendages of ware houses and dwellings, with all their filth, must be made exactly where the citizens are most interested to keep the water as pure as possible. I mean on the east side of the river, just above Fairmount dam. I can hardly conceive any thing likely to oc-

cur more objectionable than such a growth as I have intimated, just where the water is taken out to supply the tables of the city—a delicate stomach would almost turn at the reflection of the consequence to allow the water at Fairmount to be spoiled. An attempt to bring it from another place further up is quite too Utopean for the sober people of Philadelphia. The water is now at Fairmount good and pure—the city is rapidly increasing, and to preserve a supply of good water it is only necessary to prevent the water at Fairmount from receiving any adventitious mixtures—in other words, to send the trade of the Schuylkill down below the dam.

4. The alms house property possesses a river front of not less than 4000 feet—a large tract of marsh land lies along it. In case the canal was made, all this front would become valuable—the marsh must be reclaimed, and the income from the rent of wharves and other appendages of the canal must greatly increase the funds of that institution. To obtain this addition to the funds, they have merely to *allow* the canal to be made—the improvements would follow of course.

5. The coal and other articles intended to supply the city, would still come down through the locks, and be landed on the east side of the river, the value of property there would of course be kept up—the healthiness of both sides must be increased by reclaiming the marshes on the west. An active commerce on the west side would not fail to give activity to the east, even if it had not the broad city on its back. But the west cannot possibly take the business of the city—that must preserve its natural connection.

Respectfully,

E. LEWIS.

Letter from John K. Mitchell, M. D., to the Chairman of the Committee.

Jos. R. CHANDLER, Esq. CHAIRMAN OF THE COMMITTEE, &c.

Sir,

In consequence of unavoidable engagements, I was prevented from complying with the request to attend the sittings of the Committee of Councils, on the subject of a Canal from Fairmount Dam to the Woodlands. Lest a great improvement or individual interests should be injured by my absence, even in the slightest degree, I beg leave to state my opinions on two or three leading points, which have been made the subject of interrogatories.

First. As to the probable effect on the health of the vicinity. Canals brought through a dry district, far from water courses, usually though not always, bring with them diseases incident to the margins of rivers, and the inhabitants, being totally unprepared by habit for resisting such a novel influence, suffer often for a season or two, under distressing maladies. Canals along the course of rivers, or through watery districts, more frequently remove than increase fluvial diseases.—

They act as drains, and, in some cases, as in the vicinity of cities, lead to the recovery of the marshes which lie between them and the natural water courses. It seems obvious that the projected canal will obliterate the western mud bottoms of the Schuylkill, and draw into a running clear channel the waste waters of the neighbourhood.

I am therefore, decidedly of opinion, that the Western Canal, if executed, will not injure the health of the neighbourhood.

Secondly. Already the apprehension of a failure of the supply of water for city use and canal navigation, has led to a suggestion, that it will be necessary to raise Fairmount Dam at least eighteen inches higher than at present. Such an alteration of level must necessarily flood very considerable districts of low lying lands, which, in the event of a scarcity of water, must be inevitably laid bare by the demands of the city, and the wants of the Schuylkill Navigation Company. The effect of such a change need not be intimated to you. Canals and basins connected with the dam, being mere enlargements of it, with perpendicular sides, cannot, in the event of a subsidence of the water level, expose any flats to the action of sun and air, and will therefore not produce any local disadvantage. But as the heightening of the dam, and the descent of all the river boats, cannot fail, in a very few years, to make bare large marshes along the river, the committee have to reflect on the effect of such a change on the health not only of the country people, but the boatmen and canal officers, by which possibly much of the value of that channel of communication may be compromised.

Thirdly. As the healthfulness of Philadelphia, its superiority as a residence, and its security against extensive conflagrations, depend mainly on a full supply of Schuylkill water, the citizens look with great solicitude to any project likely to put it in danger of loss or diminution. Now every reflecting person must perceive that the natural increase in the trade of the river must very soon arrest, in the summer, the revolutions of the water wheels at Fairmount. Only three methods of avoiding this evil present themselves. One is, to buy out the whole right of the Schuylkill Navigation Company, and unload every boat above the dam. The effect of that measure on the purity of the water, may be readily conceived, even if the cost could be encountered.

Another mode is presented in the elevation of the dam, the flooding of vast tracts of low land, and their subsequent exposure to our summer sun, with all the consequences to health, trade, and the purity of the water.

The last method is that suggested for your present consideration, by which health will not be injured, water will not be wasted, and the purity of our excellent beverage maintained by enclosing the boats in a canal below the dam, where their conductors cannot defile that which is drawn off for city use.

As I am entirely uninterested, in any pecuniary manner whatever, in the improvements near Schuylkill, I may be permitted, as a citizen, to say, that I deem it utterly impossible for the city to finally avoid the extension of the water level of the dam, *at whatever cost*, along *both banks* of the river. We have to expect not only a mighty trade down

and up the river, but such a vast accession of people, and manufactoryes, as to task the waters of the Schuylkill to their utmost. Then, when a scarcity begins to be felt, and health is beginning to suffer, the method now proposed must, as the only feasible one, be executed at the cost of the corporation, however great that cost may be.

J. K. MITCHELL,
120 South Eighth street.

January 14th, 1835.

Mr. Chandler presented the annexed report to the Common Councel, which was laid on the table.

The joint special committee, to whom was referred the memorial of sundry citizens, asking that Councils would investigate the subject of a canal on the west side of Schuylkill, from Fairmount to Mill Creek, near Gray's Ferry, beg leave to

REPORT :

That in compliance with the spirit of the memorial, your committee gave notice of their readiness to hear what could be advanced as evidence, that the proposed canal would not be at variance with the city's prosperity; and our fellow citizens, Thomas Kittera and Thomas Mitchell, Esqs. the former as counsel for the applicants, and the latter as one desirous of the measure, attended the meetings of the committee, and took part in the proceedings.

Your committee, after hearing for three evenings, testimony from gentlemen introduced by the friends of the proposed canal, have come to the conclusion, founded as well upon the testimony adduced, as from a knowledge of the yet unimproved capabilities of the western front of the city to accommodate additional trade, and upon an appreciation of the expenditures, to the public and private, already made for future operations, as also upon the claims which the water works have upon the jealous regard of these Councils, that it is the duty of the Councels not to change the course which they have pursued, with reference to the proposed canal. And they therefore offer the following resolution:

Resolved, That the committee be discharged from a further consideration of the subject.

JOSEPH R. CHANDLER,
MERRIT CANBY,
RICHARD PRICE,
JAMES BURK.

The following was presented, together with the testimony taken before the committee, by the minority.

The undersigned, constituting the minority of the joint committee of the Select and Common Councils, appointed on the 18th ult., to investigate the merits of the application to the Legislature for the incorporation of a company to construct a canal on the west side of the

Schuylkill, from Fairmount to Mill Creek, beg leave to submit their views in relation to it.

Soon after the organization of the committee, at the request of various persons interested in this work, and on the motion of one of the committee, leave was granted to all persons feeling an interest in the scheme, to submit their views in relation thereto; and every facility was given to the receiving of evidence, either for or against the work.

Much valuable information was derived from persons connected with the trade on the Schuylkill, and acquainted with the character of the projected improvement, and the result of it has been, on the minds of the undersigned, a conviction that the work is one calculated greatly to promote the interests of the trade of Philadelphia, and thereby to advance the prosperity of our city. They are also of opinion that these results can be obtained without jeopardizing in the least the great interest which we all feel in the security of our water works, as to either the abundance or the purity of their supply from the Schuylkill. And they believe that this scheme can be carried into execution without materially interfering with any of the real interests of the city.

In order to appreciate the importance of this project, it will be well to bear in mind that the trade on the Schuylkill front of the city, was, so late as the year 1825, confined to a few unimportant objects, employing only vessels of the smallest size, and requiring very little wharf accommodation; but that, since that period, a trade, amounting already to upwards of 400,000 tons annually, has been created. Large as this may appear, it is but the forerunner of that which our city will soon command, provided a judicious foresight prepares the way for it, by affording to it accommodations commensurate with its growing magnitude and importance. An examination of the progressive increase of the trade, shows that (with two temporary exceptions only, resulting from those vicissitudes to which all commercial communities are liable) the increase in the later years has been much greater than in the first years of this series. The whole of our wharves applicable to the purposes of shipment, are now in demand, and the rents which some of them yield, would, a few years since, have been deemed incredible.

The objects which are brought down the Schuylkill, are of the most bulky nature, and require extensive accommodations, while their low price and small intrinsic value, render it desirable that they should be subjected to as small a tax for wharfage, storage, &c. as possible.

The evidence submitted to the committee, establishes the fact, that the coal trade, which now constitutes somewhat more than half the business done on the Schuylkill, is subjected to very serious obstructions, such as are avoided by companies that ship their coal from depots situated elsewhere than in the city of Philadelphia. The transfer of coal from canal boats to the wharf, by the Lehigh Coal Company at Bristol, and by the Delaware and Hudson Company at Rondout, is effected with great ease; boats unload in a canal or basin at all hours, with every advantage of low wharves, and security against accidents.

On the Schuylkill, the case is otherwise; they are brought down into tide water, and hauled alongside of elevated wharves, constructed for the high tides of that river. This circumstance limits the unloading to

a few hours, probably not more than three in each tide; and owners desirous of unloading two boats in twenty-four hours, at the same place, can effect this object only by having the work done at night, with all the objections to which night work is liable. From this cause, boats are often delayed from one to five days; the crews disperse, and the operation of unloading, which elsewhere is done by the boat's crew, is here entrusted to a separate class of workmen, who charge a high price for their labour. Their charge usually amounting to three dollars per boat, (averaging forty-five tons,) or about 62-3 cents per ton, would be readily saved, could the crew of the boat unload immediately on their arrival, as they do elsewhere. The arrangement of our wharves on the Schuylkill is unfavourable to the screening and handling of coal, prior to shipment. It is easy to conceive that a more favourable disposition could be obtained by means of a canal elevated six feet above tide water, as proposed by the petitioners; the effect of which would be to facilitate the screening of coal on permanent screens, and to avoid at least one, and in some cases two, handlings of the coal, and all the waste by breakage incident upon the same. Each handling of coal may be estimated at from eight to ten cents, and the waste at about ten cents per ton.

The freight from Pottsville to Philadelphia, last year, averaged about one dollar per ton, assuming twelve days as the duration of a trip, and the average detention on the Schuylkill, below Fairmount dam, to be about two days, (which estimates accord with the evidence of competent and respectable witnesses,) it follows that on a load of forty-five tons of coal, during the last year, the boat's crew earned at the rate of \$3 75 per day; and that an improvement calculated to reduce the length of the trip by two days, would have effected a reduction of freights of about \$7 50 per boat load, or about seventeen cents per ton. If the trip were performed in ten days, as stated in evidence, the daily earning would be \$4 50, and the saving twenty cents per ton. At present the boats lie in the river, and are exposed to considerable injury, and some risk, from the fluctuations of tide, and from the heavy swells on the Schuylkill during stormy weather. Abundant proof exists that boats have been sunk between Fairmount dam and the city wharves; and in some cases, even those that were fastened to wharves, have been endangered by occasional high tides, and south-westerly storms, or by heavy floods in the river.

From all these facts, the committee conclude that the reduction of charges on the coal trade, which would result from the execution of such a canal, would be equivalent, as has been stated in evidence, to from forty to fifty cents per ton, while the facilities which it would give for the expansion of the trade, would be very greatly enhanced.

That this result is a desirable one, will sufficiently appear when we consider the very uncertain character of that trade, now in its infancy, but which, if duly favoured, is destined to impart to our state a degree of wealth and importance unequalled by any state in the Union. And it behoves the citizens of Philadelphia, seriously to reflect upon the fact, that by the industry and enterprise of our neighbours, two of the three large depots of Anthracite coal in Pennsylvania are now made to

pour their wealth directly into the city of New York. Short as has been the period since the first application of mining to the large depots of Pennsylvania, we have already witnessed the order of nature evidently twice made to yield to the enterprise of man, and the product of our state diverted from its natural channel to a new one.

The valleys of the Lackawanna and of the Lehigh, which at one time were thought to be the unalienable, as they were the natural, tributaries of the Delaware, are now sending their produce directly to New York. The coal of the former crosses the Delaware at Carpenter's Point, to seek a distant market; and that of the Lehigh, crossing the same stream at Easton, or at a lower point, will, by means of the Morris Canal, but especially of the Delaware and Raritan Canal, seek a foreign market. While our citizens are lulled into security, our neighbours have been active in executing works, by which nearly one-half of the coal of Pennsylvania will pass away for ever from our markets to theirs. It is true, we have it in our power to check their operations, and to promote the success of our own commerce. We may, by increasing the facilities of the Schuylkill trade, and reducing the charges upon it, bring the coal of the Schuylkill into market, on more favourable terms than those upon which the New York merchants can receive that of other depots by their canals; and it is unquestionably the interest of the city of Philadelphia to do so, if she values the extensive coasting trade, and the influx of foreign capital which the produce of Schuylkill county can be made to procure for her.

The undersigned are further of opinion, that as soon as the trade upon the Pennsylvania canals shall have been created, as it must very soon be, the demand for wharf accommodations on the Schuylkill, for depots of grain and country produce, will be immense. The increase from this source alone, in the ensuing ten years, will probably surpass, certainly equal, that which we have witnessed from the coal trade, in the last ten years. If the twenty-two millions of dollars which the state has invested in her public works, and the five millions expended by the Union Canal Company, and by the Schuylkill Navigation Company, are ever to yield, as we doubt not they will soon do, ample fruits, it must be by carrying upon the Schuylkill a trade of immense extent, requiring the most expanded accommodations. Already we have witnessed the existing warehouses on that river crowded with goods, destined for the interior, and with the return cargoes of flour, grain, &c. If, moreover, we consider, that all the Schuylkill coal required for the city consumption, must always be landed on this side of the river, we need entertain no apprehension that the execution of the canal on the west side will materially affect the value of our city front on the Schuylkill.

We will not pause to inquire into the direct advantages which the city might derive from this increased facility to the coal trade, arising out of the large and valuable tracts of anthracite and bituminous coal lands bequeathed to her by Stephen Girard, and Elias Boudinot; but we will call the attention of Councils to the great value which the new almshouse property on the west side of the Schuylkill would acquire. It is in evidence before the committee, that the front of that property on the Schuylkill could be immediately converted into depots

for the shipping of coal, producing a large income to the city, if rented, or greatly reducing the amount of debt on that property, if sold.

It should be borne in mind, that the city proper has a large interest, say from one-half to two-thirds, in the property and debts of the corporation of the Guardians of the Poor; that the expense of erecting the new almshouse, including the purchase of the land, does not fall much short of one million of dollars; and that the tax upon the city for the support of the poor, now rises as high as thirty-four cents in the one hundred dollars. The projected canal would pass through this property, for a distance of not less than 4,000 feet, enabling the city to relieve itself, by its advanced value, from a very heavy burthen.

Indeed, the advantages which would result to the city from the execution of this work, appear to us so direct and palpable, that nothing but a well grounded apprehension that they might be accompanied by other consequences of an injurious character, can justify an opposition to it on the part of the city.

The objections which have been raised to it are,

1st. Its effect upon the Water Works at Fairmount.

2d. Its injurious tendency as regards the health of the country.

3d. The withdrawal of a portion of the inhabitants from the city to West Philadelphia.

4th. The reduction in the value of our wharf property on the Schuylkill. This last objection we have already expressed our belief is unfounded.

The first of these would, undoubtedly, be the most serious, if it were well founded; but, in the opinion of the undersigned, there is no reasonable ground for apprehension.

It has been said that the reduction in the waters of the Schuylkill, occasioned by the construction of this canal, would endanger the supply of the city. If this opinion had not been advanced by gentlemen of known experience and judgment, the undersigned would scarcely have credited that such an apprehension could be entertained; and even now, with great deference to the judgment of others, they can scarcely forbear viewing it as one of the evidences of that nervousness with which every thing connected with the Fairmount Water Works is usually considered. Assuming the canal to be two and a half miles long, thirty feet wide at bottom, with a water surface of forty-five feet, and a depth of five feet, it will be found that its capacity is equal to 2,475,000 cubic feet, and that its surface is 594,000 square feet. The locks of the Schuylkill Navigation Company, at Fairmount, are eighty feet long, nine feet lift, and their width is in one lock fourteen feet, in the other seventeen feet, giving for the average capacity of the locks, 11,160 cubic feet. So that the whole capacity of the canal would fall short of 222 locks full of water.

It was proved before the committee, by the evidence of an experienced engineer in the service of the Navigation Company, that it is a large allowance to suppose that the loss of water in the canal by leakage and evaporation, would, after the second year from its completion, amount to forty-five cubic feet per minute per mile. At this rate, the total loss by leakage and evaporation, daily, on the whole canal, would

be 162,000 cubic feet, or less than fifteen locks full daily; and it would require upwards of fifteen days for the water to waste away, if no additional supply were introduced. This is taken from the experience upon 123 miles or more on the New York canal. On the Ohio canal two experiments made by this Engineer, the one on nine, the other on forty miles, gave for the results a loss of thirteen cubic feet in the first, and of twenty-five cubic feet in the second per minute per mile; which would greatly reduce the danger of waste of water from the making of this work.

But even admitting the largest loss which we have heard of, that which took place on the long levels, with extensive embankments, of the New York canal, during the first year or two after its being opened, and before it might be said to be perfected, even then the loss is far from considerable. In this extreme case it is stated at 70 cubic feet per minute per mile; which would amount on the projected canal to 252,000 cubic feet per day, equivalent to less than 23 locks full, and requiring near ten days for the canal to empty itself entirely by this means, if all access of water were stopped. A short calculation from these data proves that even at this extreme rate of loss, the total consumption of water by evaporation and leakage would during the whole season of navigation, scarcely exceed half the amount of water now consumed for lockage, even admitting that the arrangement of business were such that every chamber full of water, that is now wasted, passed two boats, one ascending and the other descending. According to the evidence submitted by a gentleman of scientific acquirements, who was examined before the committee, the whole daily evaporation on two and a half miles of the Canal, taken at the maximum of the results recorded by philosophers, would be only half the capacity of one of the chambers of the locks at Fairmount—a result so small, that after making the largest allowances for differences of climate or errors of experimentors, the quantity is scarcely deserving of notice. The evidence of persons, familiar with the ground over which the canal would pass, clearly establishes, that, with due care, a very good and water-tight work can be constructed. The blue clay which is found on part, if not on the whole of the line, is declared by competent judges to be almost impervious to water; wherever the canal passes through it, no leakage could take place; and where it does not occur, it could be readily brought to the spot so as to make the work water-tight. But it is easy to secure ourselves against all losses by introducing a clause in the Bill, directing that gates should be placed at Fairmount, under the control of an officer appointed by the City, to be closed whenever a scarcity of water in the Fairmount dam, or the leaky condition of the canal below, would produce an apprehension of an insufficient supply for the City Water Works. To this and other salutary restrictions it is understood that the applicants would cheerfully assent.

It has been urged that this work might impair the purity of the Schuylkill Water. It is difficult to conceive how the water above Fairmount Dam, on the east side of the Schuylkill could be effected by the operations of a coal trade on a Canal two miles below the dam on the west side. The opponents of the work have chosen to place themselves

upon the horns of a dilemma on which we will leave them. Either the canal will be tight, in which case there will be no waste of water; or if it be leaky so as to endanger the supply of the City, the water in the canal cannot form the stagnant pool which it has been represented to be. The flow through the canal can always be regulated by the City Authorities, and unless there were a returning tide from the lower to the upper part of the canal, which is impossible, the impurities which would arise from the occupation of it by boats could not be carried back to the wheels at Fairmount. It is, however, easy to foresee that if facilities are not given to the Coal Trade to establish itself on the Schuylkill below the dam, it will occupy the pool itself above Fairmount, and contaminate the waters at that spot. By means of the Penn Township Rail Road, coal landed at this place can be shipped with little expense on the Delaware; and by other schemes now in agitation, it may from the same spot be taken by Rail Road to landings at the mouth of the Schuylkill, where it might without any manual labour be screened and transferred from the cars to the vessels engaged in the coasting trade. How far either of these outlets to the Coal Trade may be opened before long, the undersigned will not venture to decide: but they will express their firm conviction that, in either case, the accumulation of filth in the pool above Fairmount would seriously affect the character of the water used by our citizens.

2d. The injurious tendency of the canal on the west side of the Schuylkill upon the health of the vicinity, has been urged with great zeal; but, in the opinion of the undersigned, with more speciousness than truth. They are inclined to adopt the opinion of an experienced physician of our city, that the canal would, if properly constructed, rather be salutary than otherwise, as it would act as a drain, and lead to the recovery of the marshes that lie on the west side of the Schuylkill. As soon as the canal is made, those marshes will be reclaimed, the river embanked; and what is now a source of miasmata will be converted into an active scene of health and business. As attempts have been made to create an impression that the sewer from the Almshouse would discharge its contents into the canal, the undersigned deem it proper to state that the nature of the ground would forbid the execution of such a scheme, if other causes did not operate against so repulsive a thought. The sewer of the Almshouse will pass several feet under the bottom of the canal. It would be arched over and entirely concealed from sight.

3d. The withdrawal of a portion of the population of the city to the vicinity of the canal has been alleged as one of the evils to flow from this work. The undersigned do not view it as likely to produce such a result. The business on this side of the Schuylkill will always be active, and require the labour of the same population that now works there. A new impulse would be given to the trade of the city, and any increase of population required by West Philadelphia will be drawn from other sources. At any rate, the traders in coal will always find it desirable for them to reside in the city, near to the centre of commercial transactions. The canal will only attract the class of persons actually engaged in handling the coal. If the canal be not made the same population will be required in Spring Garden and Penn Township

or at the mouth of the Schuylkill; and the undersigned cannot discover how the circumstance of their being in West Philadelphia would impair the prosperity of the city proper. The latter may be considered as the heart, the former as the limbs, and whatever produces a healthy growth and thriving at the extremities, must always promote strength and healthy action at the centre.

The undersigned have thus attempted to consider the advantages and disadvantages ascribed to this scheme. They may be mistaken in their views, but the result of a long acquaintance with the Schuylkill trade, and of a laborious investigation of this subject, is, that the proposed scheme is one which, far from militating with the real interests of the city will advance them; that it is a work called for by the present exigencies of the coal trade; that if it be not executed now, other schemes less beneficial to the city will prosper at its expense; but that this work sooner or later, must and will be done; that it is essential to the prosperity of Philadelphia, as well as to that of the state at large. They regret that the votes of Councils, both during the last and present session of the Legislature, indicate an opposition to this scheme; they respectfully suggest that the voice of the city should be heard as seldom as possible in the councils of the state in opposition to the great interests of the commonwealth. This opposition should be reserved for cases alone which are of vital importance to the city. Such a case they believe does not now present itself. As the majority of the committee have not deemed it expedient to report the information submitted to them, the undersigned have annexed what, after comparison with their own notes, they believe to be an accurate statement of the evidence, with two written communications. They report them in order that any member of Council desirous to do so, may have an opportunity to examine them for himself.

(Signed)

WM. H. KEATING,
MANUEL EYRE.

January 22, 1835.

